

Evaluation of Physical Properties of Feedstuffs in Supporting the Development of Feed Mill at Farmers Group Scale

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Abstract— This study aimed to determine the physical characteristics of the local livestock feed ingredients in order to collect baseline data that will be useful in the processing and handling of feed materials mechanically. The study was conducted in Livestock Farmers Group, Pinrang Regency, and in the Laboratory of Technology and Feed Industry Faculty of Animal Science, Hasanuddin University, South Sulawesi, Indonesia. The materials used were the samples of ten (10) types of animal feed ingredients, and each sample approximately 30 kg. The materials of feedstuffs used were divided into 4 (four) groups based on their function in the ration. In this study, the observed variables were the physical characteristics of the feed material including angle of repose, bulk density and compacted bulk density. Measurements of physical properties of the each feedstuff were conducted and repeated 20 (twenty) times. This study concluded that the angle of repose of feedstuffs was influenced by particle size, surface characteristics of materials, density, moisture and fat. The bulk density and compacted bulk density was affected by particle size. Value of physical characteristics of feedstuffs such as angle of repose, bulk density and compacted bulk density is useful to improve the efficiency of feed processing mechanical.

Index Terms—feedstuff, feedmill, farmers, physical properties, angle of repose, bulk density